

Published by

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About CMFRI

The Central Marine Fisheries Research Institute, Cochin, is a premier research Institute under the Indian Council of Agricultural Research, devoted to research and training in marine fisheries and mariculture.

CMFRI has three Regional Centres viz., Mandapam Camp, Visakhapatnam and Veraval and seven Research Centers distributed along the Indian coast line, catering to the marine fishery policy needs of all maritime states of the country.



Director speaks

We shall be glad to know that the year 2010 has begun on a successful note for us with our cage culture demonstrations yielding fruitful results at Mandapam and Kanyakumari. Our untiring efforts have been rewarded with a good harvest of lobsters at Mandapam (a selective



harvest of 127 kg of lobsters yielding revenue of Rs.1.27 lakhs) and at Kanyakumari (a partial harvest of 175 kg in 94 days, yielding revenue of about Rs.2 lakhs). These results surely have raised our morale and further increased our confidence level to progress further in this field. We shall also be proud to say that we have now developed the 6th version of the GI-epoxy coated cage, which is more user-friendly & highly economical and was launched recently in Karwar. An important experience gained from the success at Mandapam and Kanyakumari is that in both the cases, the involvement of the primary stakeholders was very much helpful to achieve good results in our open sea cage farming demonstrations.

So far our cage farming demonstrations were depending on other agencies for seeds. **Now we take pride in informing that CMFRI has successfully demonstrated the breeding of Cobia for the first time in India and the seed production is in progress.** Now we are in a position to produce seeds for our cage farming experiments and with this phase, we will be in a position to supply seeds of cobia and seabass to the mariculture industry also. This will also provide additional employment opportunities to sustain the rural livelihoods.

We are also moving ahead in development of new products. We have successfully launched two new products this month, viz., **Cadalmin™ Green Mussel Extract (GME)** and **Cadalmin™ Varna Ornamental fish Feed**, which will be hitting the market soon. We hope to release many such new products in the days to come to create a significant strides in the field of mariculture. All these developments have been attained only with our whole hearted support, persevering efforts and focused attention. We shall continue to maintain our sincere and committed efforts in achieving our goals in the days to come.

Dr. G. Syda Rao
Director

About the cover: Lighting of the ceremonial lamp by Dr Janet Whaley, Dr G. Syda Rao, Dr. Vivekanandan and Dr. Mridula Srinivasan at the inaugural function of Marine Mammal Stranding. Dr. P.L. Gautam, Dr. E.G. Silas and Dr. Lakhwinder Singh are also seen.



Workshop on Marine Mammal Stranding in collaboration with NOAA, USA

A workshop on Marine Mammal Stranding was organized by the Central Marine Fisheries Research Institute, Kochi during January 21-23, 2010 in collaboration with National Oceanic and Atmospheric Administration (NOAA), USA and sponsored by the Indo-US Science and Technology Forum (IUSSTF), New Delhi. NOAA Fisheries International Affairs contributed additional funding to US participants for the workshop related costs. The principal coordinators and organizers of the workshop were Dr. E. Vivekanandan (CMFRI) and Dr. Mridula Srinivasan (NOAA).

Workshop objectives and goals

- Taking preliminary steps towards establishing a national stranding network in India
 - consistent and uniform protocols and standards
 - sharing information and archiving data
 - addressing legal and regulatory issues
- Promoting marine mammal research and conservation
- Comparing lessons learned and sharing information for future collaborative opportunities both domestic and international.

Highlights

- Totally 42 participants (including five

from USA) from 23 organizations attended the workshop. The participants were scientists, professors, students, veterinary surgeons, and government and non-government officials.

- The workshop was inaugurated by Dr P. L. Gautam, Chairman, National Biodiversity Authority (Ministry of Environment & Forests, Govt. of India) on January 21, 2010. Other dignitaries who presided over the inaugural session included, Dr. Syda Rao (Director, CMFRI), Dr. E.G. Silas, Former Vice-Chancellor, KAU, Dr. Lakhwinder Singh (Chief Conservator of Forests (Research), Kerala,) and Dr. Janet Whaley, National Stranding Coordinator, US National Marine Fisheries Services, Office of Protected Resources, NOAA.
- The following three publications were released.
 - i) Booklet on 'Marine Mammal Research and Conservation in India'
 - ii) Field guide for Marine Mammals of India
 - iii) Poster on 'Marine Mammals of the Indian EEZ'
- Dr. E. Vivekanandan and Dr. Mridula Srinivasan outlined workshop objectives and goals followed by participant's self introduction. Setting

the stage and detailing the need for a stranding programme, Dr Janet Whaley, NOAA presented "Value of marine mammal stranding programme". This was followed by six talks by resource persons from India on the topic "Marine Mammal Strandings, Research & Conservation in India" and on "Anatomy of marine mammals, pathology and overarching concepts" by Dr. Dave Rotstein and Charley Potter from Smithsonian Institution.

- On January 22, Sarah Sharp, IFAW presented the topic "How to Respond to Strandings". There was a stranding animal demonstration by using inflatable dolphins.
- A dolphin tour was arranged for all workshop participants in Kochi backwaters on the afternoon of January 22, 2010. During the tour, a few Indo-Pacific humpback dolphin (*Sousa chinensis*) were sighted.
- On January 23, steps towards establishing a stranding program were discussed by forming working groups of participants on the following topics: stranding authorization, event preparedness, funding, communication, public outreach and research. Panel Discussion was chaired by Dr G. Syda Rao, Director, CMFRI and was coordinated by Dr. Mridula Srinivasan and Dr. E. Vivekanandan.



Stranding Dolphin demonstration by
M/s. Sarah Sharp, USA



Workshop presentation session



Stranding Dolphin demonstration



Dolphin watch cruise

Workshop Outcomes/Recommendations

(i) Ministry of Environment and Forests, Government of India will serve as the lead agency in establishing and supporting a National Marine Mammal Stranding Network in India by allocating and distributing funds. Central Marine Fisheries Research Institute (CMFRI), Kochi HQ will serve as the nodal agency for executing and managing the Network. CMFRI has 60 years of stranding data and has been instrumental in supporting and promoting marine mammal research in India. Therefore, CMFRI will serve as the central repository for any current or future marine mammal stranding data collected along the Indian coastlines. These data will be made available to the public. CMFRI will also store specimens and tissues as needed after a stranding event.

(ii) Existing MoU between National Oceanic and Atmospheric Administration (NOAA) and Ministry of Earth Sciences (MoES) can be leveraged to set up bilateral research projects and capacity building/training in three areas: fisheries management, impact of climate change on living marine resources, and marine mammal conservation including stranding response.

(iii) Annual workshops within each regional ecological zone (NW, SW, SE, NE, Andaman and Nicobar and Lakshadweep Islands) and at national ministerial level need to be organized subsequent to the approval of guidelines submitted to the forest department.

The participants viewed the workshop as a good beginning towards establishing a Marine Mammal Stranding Network in India. It was suggested that the expertise of the USA participants and existing Indo-US bilateral agreements will be sought and leveraged to strengthen the Network in the future.

(E. Vivekanandan, Head, DFD)



Participants at the workshop

Successful harvest of sea cage farmed spiny lobsters and ornamental fishes at Kanyakumari and Mandapam



Reaching the cage culture site at Kanyakumari coast

‘Conservation mariculture’ of lobsters in floating sea cages off Kanyakumari coast by CMFRI

demonstrates the sustenance of lobster fishery and lucrative income for fisher folks

In the recent past, owing to the high unit value, lobster has turned out to be a potential candidate for mariculture. India earned more than Rs. 72 crores through export of lobster, mostly to Southeast Asian countries and Japan. Considering the rich lobster grounds off Kanyakumari, Muttom, Kadiapatinam and Enayam along the Kanyakumari coast, experiences in lobster growth rate in cages reared earlier in Kerala coast as well as the unit value of lobster meat, lobster culture was initiated as the maiden attempt in Kanyakumari in floating cages. In this coastal stretch, lobster young ones are available as by catch in considerable numbers almost throughout the year. These under-sized lobsters are not taken by the exporters and they fetch very little price or discarded. Such under sized lobsters obtained as by – catch in fish nets and as well as in specific nets such as ‘*chingi valai*’ and traps were used as stocking material in the cages installed in Kanyakumari. This has ensured their survival as well as growth without affecting the natural resource.

The HDPE floating cage was moored off Leepuram - Kanyakumari as per the ‘single mooring method’ standardized by CMFRI. The cage was installed on 27-10-2009 at N: 08°06.19 and E: 077°33.918 in 8.5 meters depth. A total of 2400 lobsters were stocked in the 6 m diameter cage with a depth of 4.5 m. The inner bottom of the inner net of the

cage was lined with silpolin to provide the required substrata for lobsters. Hiding gadgets for lobsters were provided. The size of baby lobsters at the time of stocking was ranging from 45 to 90 g. (mean = 68.5 g). The stocked lobsters were fed regularly with live mussels and chopped trash fish by the cage culture team members as per the guidance of



Dr. Madan Mohan, ADG, (M.Fy) delivering the inaugural address



Dr. Madan Mohan, ADG, (M.Fy) and Dr. G. Syda Rao, Director, CMFRI presenting NFDB marine floating cages to the sea farming members at Kanyakumari

CMFRI officials. The periodical monitoring of the growth of lobsters in cages indicated the growth rate as 1.0 g per day.

From the open sea floating cage, a total of 175 kg of lobsters were harvested after 94 days of rearing. The weight ranged from 110 to 245 g and the length ranged from 160 to 210mm. A gross revenue of Rs. 2,10,000/- with a net income of Rs. 89,725/- was obtained. The capital productivity ratio was 0.4. Thus it is demonstrated that lobsters are one of the important candidate species for the **'Capture - Based Mariculture'** in marine floating cages in Kanyakumari coast. The same cage was stocked again with the lobster young ones immediately for the next crop.

In the cages, female lobsters with full egg mass were noted after two to three months of rearing from the size range of 135 gram onwards. Thus the cage farming of lobsters in this coast assumes high significance due to its **"Conservation Mariculture"** potential. Hence, in this coast, it is proposed to maintain the brood stock of lobsters as a 'community level activity', in separate cage in the cage farming site for breeding in their natural habitat as an important step towards conservation.

The following observations/inferences were made:

1. The fish (including ornamental fish) and lobster population around the cage had increased, enhancing the

marine biodiversity in the region.

2. The cage and mooring system have withstood the impact of severe rough sea conditions characteristic of the Kanyakumari coast signifying the technological achievements of the CMFRI in the novel open sea cage mooring and open sea cage farming.
3. The cage-reared female lobsters matured at a smaller size indicating a higher 'Index of Reproductive Potential' (IRP) compared to the lobsters collected from the natural habitats.
4. Considering the setbacks to the land – based farming of lobsters due to lack of suitable technologies and production methods, open sea cage farming of lobsters could be regarded



Harvested lobsters

as the only best profitable alternative for lobster mariculture.

The harvesting was witnessed by Dr. Madan Mohan, ADG (M.Fy); Dr. G. Syda Rao, Director, CMFRI; Dr. R. Sathiadhas, Head, SEETTD; Dr. Rani Mary George, SIC, Vizhinjam RC of CMFRI; Dr. A. P. Lipton, Principal Scientist; Mrs. Ajitha Mano Thangaraj, Panchayat Union Chairperson; Mr. A. Chidambaranathan, DSP, Kanyakumari; several NGO representatives and entrepreneurs. A Tamil pamphlet on Cage culture was released on this occasion.

(A. P. Lipton, Principal Scientist)



Dignitaries showing the harvested lobsters



Dignitaries on the Dias at the inaugural function

At Mandapam, Gulf of Mannar

The cage was launched at the southern side of the Regional Centre of CMFRI at Gulf of Mannar during last week of October 2009 and stocked with 1300 numbers of spiny lobster juveniles (*Panulirus homarus* and *Panulirus ornatus*) collected from the Tuticorin and Kanyakumari areas. The initial weight of the lobster juveniles ranging from 65 to 85 gms. The fishes were fed *ad libitum* thrice a day with chopped trash fish and *Octopus* sp. The programme was taken up in collaboration with a reputed lead organization, the Fishermen and Handicapped Education Economic Development Trust (FEED Trust) which has many Self help Groups under them meant for betterment of the physically challenged people and training them on ornamental shell craft making tailoring, book binding, etc., in an attempt to make them self-reliant and skillful. A floating watchman cabin was also launched near the cage to ensure safety during night times.

A function for the partial lobster harvest of the lobsters was arranged on 5th February 2010 near the seashore gate of our Regional Centre. The lobster cage was brought nearer to the shore and selective harvesting of lobsters above



Harvested lobsters

200 g. was done. The cage reared percula clown fish, *Amphiprion percula* were also harvested. The harvesting was witnessed by Shri.S.Singarayan, Coastal programme Leader, Dhan Foundation, Madurai; Shri.P.Rajan, Regional Co-ordinator, DHAN Foundation, Ramanathapuram; and Smt. R.Sreekirupa, In-Charge, M. S. Swaminathan Foundation, Thangachimadam. A total of 127.1 Kg of lobsters were harvested. After the harvesting, a meeting was conducted at the Conference Hall. The meeting was presided over by Dr.G.Gopakumar,

Scientist-in-Charge. During the meeting, the amount realized from the sale of lobsters i.e.Rs.1,27,100/- @Rs.1000 per kg was handed over to Shri.E.Altrin, the representative of the SHG. A total of 400 nos of *A.percula* were harvested from the ornamental fish cage and an amount of Rs.40,000/- was realized through this sale@Rs.100 per piece. This amount was handed over by the Scientist-in-Charge to the Centre's office for accounting under the revenue generation of the centre. The representatives of the FEED Trust expressed their gratitude for involving them in the sea cage farming of



Harvesting ornamental fishes



lobsters and helping them to earn a lucrative profit for the betterment of the physically challenged. Our guests of honour from DHAN Foundation and M. S. Swaminathan Research Foundation, in their felicitation speeches, highly appreciated the effort taken by the CMFRI and praised our endeavor of joining with eligible SHGs for promoting their socio-economic upliftment



Harvested ornamental fishes

Dr. G. Gopakumar showing the harvested lobsters

Training Programme

Training on Marine Ornamental Fish Culture at Mandapam RC

A 10 days training course on 'Marine Ornamental Fish Culture' was conducted at Mandapam Regional Centre of CMFRI, Mandapam Camp from 12 to 21.10.2009. This programme is sponsored by National Fisheries Development Board (NFDB). This is the first course of its kind which is being organised by CMFRI and the scientists involved in the ornamental fish seed technology development are imparting the grass root level technical skill to the participants.



Participants at the Ornamental Hatchery



Inauguration of the Training Programme by Comdt. D.S. Saini



Participants at the Microalgal stock culture

Training to fishermen community

A training programme was conducted at the Mandapam Regional Centre of CMFRI on marine ornamental fish culture to 20 participants from the fishermen community for 10 days from 8th to 17th February 2010. The participants were sponsored by the Gulf of Mannar Biosphere Reserve Trust (GOMBRT). This training was to supplement the efforts

taken by the GOMBRT to create alternative livelihood opportunities to the fishermen from the coastal areas bordering the Gulf of Mannar Biosphere Reserve. The course was inaugurated by Dr (Mrs) Aruna Basu Sarcar, Director, GOMBRT, on 8th February at the conference hall of MRC of CMFRI.



Dignitaries on the Dias at the inaugural function



Distribution of Certificates to the participants by Trust Director, GOMBRT

National training on Cage Culture of Sea bass 14 - 23 December 2009 at Cochin



Cage site at Cochin

CMFRI has initiated many successful mariculture activities including breeding and culture of edible oysters, pearl oysters, mussels, marine ornamental fishes, sea cucumbers, *etc.* Opening up a new horizon in mariculture in India, CMFRI has pioneered in introducing open sea cage culture of Asian sea bass and lobsters at different maritime states in India. With the objective of dissemination and sharing the information and experience in this emerging field and to enhance the competency and confidence of

participants in the area, a national level training on "Cage culture of sea bass" was organized by Central Marine Fisheries Research Institute (CMFRI), sponsored by National Fisheries Development Board (NFDB), Hyderabad, from 14th to 23rd December 2009 at CMFRI, Kochi, Kerala. Dr. Imelda Joseph, Senior Scientist, Mariculture Division, CMFRI was the Course Coordinator. The training programme was inaugurated on 14th December 2009 by Dr. G. Syda Rao, Director, CMFRI. Dr. G. Gopakumar, Head, Mariculture Division

& SIC, Mandapam Regional Centre of CMFRI welcomed the invitees and participants. Director in his inaugural address stressed on the immediate need for initiation and expansion of Mariculture in India. Dr. Imelda Joseph had proposed the Vote of Thanks. The training was attended by 25 participants from six maritime states (Kerala, Tamil Nadu, Maharashtra, Gujarat, West Bengal and Orissa) of India and UT of Andaman & Nicobar islands. Those participated in the training, held a representative cross section of positions within the fisheries



Trainees with Director, CMFRI, Course Co-ordinator & Faculty Members



◀ Lighting of the Ceremonial lamp by
Dr. G. Syda Rao, Director



Release of the course manual

sector. They included the state and central government officials (Supt. of Fisheries, Inspector of Fisheries, Technical Assistants, Extension Officers, Fisheries Officers and Marketing/Coordinating personnel), entrepreneurs, research assistants and farmers from different maritime states in India. The Course Manual was released during the occasion.

There were 24 sessions in the training programme handled by eminent resource persons from CMFRI, Central Institute of Fisheries Technology (CIFT), Central Institute of Brackishwater Aquaculture (CIBA) and Marine Products Export Development Authority (MPEDA). The trainees were exposed to various aspects of a cage culture operation like: materials, structure of cage frame, mooring, nets of different types and mesh sizes. On 23-12-09, a discussion with trainees was arranged with the cage culture team at CMFRI, Cochin (Dr. Imelda Joseph, Dr. Shoji Joseph & Dr. Bobby Ignatius), along with Dr. G. Syda Rao, Director CMFRI. Pre training and post training knowledge evaluations were conducted and a feedback was taken from the trainees after the completion of the course.



Certificate distribution by
Dr. B. Meenakumari, Director, CIFT



Discussion by the Director with cage culture team

The valedictory function of the national training was held on 23rd December 2009. Dr. B. Meenakumari, Director, CIFT, Kochi, was the Chief Guest for the day. Dr. G. Syda Rao, Director, CMFRI, presided over the function and Dr. Grace Mathew, Head In-charge, Mariculture Division, welcomed the gathering. Dr. B. Meenakumari, the Chief Guest distributed participation certificates to the trainees. Dr. Imelda Joseph proposed the Vote of Thanks.



Trainees with cage

Research Highlights

Spanner crab *Ranina ranina* spotted at Tuticorin

A rare species of crab, orange in color with long claws was caught on the 8th of October 2009 by gillnet (paruvilai at depth of 70 m) fishermen of Theraspuram, Tuticorin. Finding the specimen different from usual variety of crabs found in the region, the fishermen informed the scientists at Central Marine Fisheries Research Institute, Tuticorin. The crab was brought to the laboratory and later identified as *Ranina ranina* (Linnaeus, 1758) or spanner crab. It measured 94.8 mm in Carapace width and weighed 384 g. Raninidae is the family of unusual crabs and appears to be primitive ones. The present report is the third from Indian waters and the first from Tuticorin.

(Tuticorin Research Centre of CMFRI)

High intensive closed recirculatory substrate culture system (HICRSCS) for sand lobster culture tested successfully

Sand lobster juveniles (15 g size) collected from the wild were stocked and reared for 220 days in the HICRSC system developed at Madras RC of CMFRI. The net survival at the end of the rearing period was 90%, with the total biomass increasing from 1.5 kg to 10 kg. The lobsters were fed on live estuarine and marine clams alternatively, twice a day. The net production obtained was to the tune of 5.7 kg/ sq.m. The efficiency of the biofilter was regularly maintained by using essential buffers to condition the pH and calcium requirements. The wet weight biomass to raw feeds used gave an approximate conversion value of 1:5 for the production. The results of the study prove that intensive and smaller holding systems are favourable for culturing sand lobsters.

Record of large-sized spiny lobster, *Panulirus penicillatus*, from Kasimedu Fisheries Harbour landing centre in Chennai

Two live specimens of the spiny lobster *Panulirus penicillatus*, a berried female and an adult male, were collected from Kasimedu Fisheries Harbour in Chennai in November 2009. The lobsters were caught by bottom set gill nets operated in



Dorsal view of *Ranina ranina* (Linnaeus, 1758)

the near shore reefs areas. The male lobster measured 14 cm in Carapace Length, 34 cm in Total Length and weighed 1.6 kg. The female lobster measured 86 cm in CL, 223 cm in TL and weighed 500 g. The fecundity was estimated to be approximately 2,00,000. These lobsters have a greenish to reddish brown body, speckled on carapace and abdomen with tiny whitish spots. The legs have longitudinal yellow lines. Antennules are not banded. Eyes are black. Males are usually darker than females. The antennular plate has four strong spines. Exopod of III maxilliped is present with flagellum. Tips of large spines on carapace yellow. The species is not gregarious and its distribution is not influenced by rivers or surf zones. Commonly found in Thailand and Galapagos, exported from Philippines and Indonesia.

Unusual landings of Red Saddle Shrimp, *Trachysalambica* (*Trachypenaeus*) as per (Alcock) landed at Chennai Fisheries Harbour

Unusual catch of Red Saddle shrimp, *Trachysalambica* (*Trachypenaeus*)

asper (Alcock), locally called "Sekappu Vari eral" and "Vandu eral" in Tamil, were observed in the trawl landings at Chennai fisheries harbor during the month of November 09. The shrimps were landed by multi-day fishing trawlers (5-7 days, Thangal). About 1 to 1.5 tonnes of red saddle shrimp were landed. The size range was 48-110 mm. The sex ratio showed dominance of males.

(Madras Research Centre of CMFRI)

Phenological changes in Yellow fin tuna, *Thunnus albacares*

Yellowfin tuna was reported to attain sexual maturity at 95 cm FL and above by the earlier workers. But studies conducted during the last two years (2008 & 2009) indicated that they would attain sexual maturity at a much smaller size than reported earlier. Full sexual maturation was observed from a size of 50 cm FL onwards and size at first maturity was estimated as 54.5 cm FL.

(Pelagic Fisheries Division)

Cages launched at Chennai

Two circular marine cages of 6 m diameter for growing sea bass and spiny lobsters have been launched off Semmencherry near Kovalam, Chennai on 10-02-2010. 7000 sea bass *Latus calcarifer* fingerlings have been stocked in one cage and seeds of 1500 lobsters *P. homarus* along with 1000 grey mullets *Mugil cephalus* have been stocked in another cage. Rearing is going on.



Moving the cage into the sea

Travails of Bramble Shark



Embryo bearing females of *E. brucus*

During the first quarter 2010, *E. brucus* occurred in large quantity as bycatch in deep-sea shrimp trawlers operating beyond 250 m depths at Cochin. Meat is processed by salting and drying and sold in local markets. Liver oil is also extracted along with *Centrophorus* spp., but fins have no value. The dominance of gestating females in the landings causes large scale destruction of embryos and eggs of this species which has to be curtailed.

(Pelagic Fisheries Division)

Deep-sea trawl survey

Objective of the study was to assess the deep-sea fishery resource mainly myctophids in the south west coast of India. Bottom trawls were operated at depth ranges from 30 to 510 m. Depth wise distribution and abundance of deep-sea fishes was studied. The major components of the

trawl catch were species belonging to the families Myctophidae, Sternoptychidae, Gonostomatidae, Ateleopodidae, Chlorophthalmidae, Ipnopidae, Evermannellidae, Neoscopelidae, Echinorhinidae, Centrophoridae, Ophididae, Rajidae and Stomiidae. *Neopinnula orientalis* dominated in the

catch at depths of 280- 340 m and myctophid *Diaphus watasei* at 380- 510m. Deep-sea prawns like *Aristeus alcockii*, *Heterocarpus woodmasoni*, *H. gibbosus*, *Plesionika spinipes* and *Metapenaeopsis andamanensis* were observed in the catch. 17 species of deep sea crabs were also collected and further studies are in progress

Stocking of Sea bass seed in Cage at Visakhapatnam



Releasing of sea bass seed in the happa in the cage

Sea bass seed (6 cm mean size) were stocked in open sea floating cage installed off Visakhapatnam. Around 10,000 no. of seabass fingerlings were

stocked in two happas, fixed in the cage. Feeding is being carried out with artemia nauplii, shrimp feed and artemia flakes twice daily.

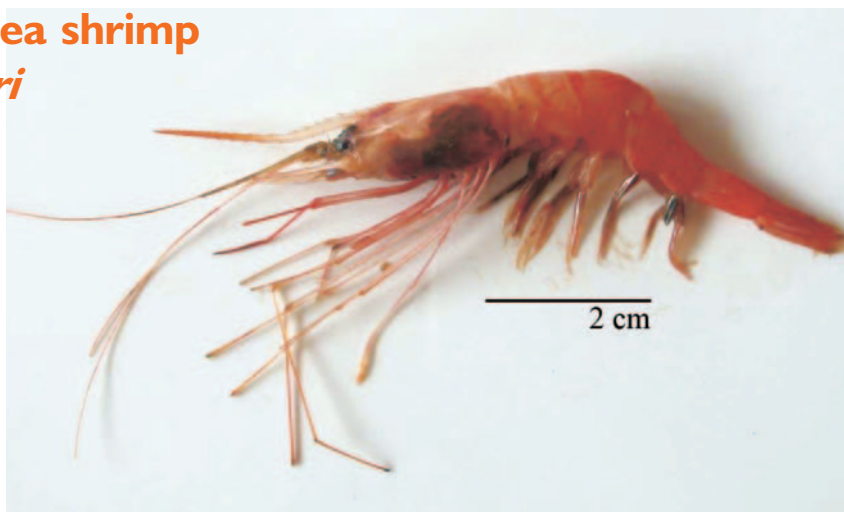
Heavy landings of Ribbon fish and cephalopods at Veraval

During the months of January and February of 2010, heavy landings of ribbonfish, *Trichiurus lepturus* and cephalopod, *Loligo duvaucelli* were recorded from multiday trawlers at Bhidiya, Veraval. The catch ranged from 600 – 1000 kg per trawler for *Trichiurus lepturus* and from 800 – 1000 kg per trawler for *Loligo duvaucelli*.

(Veraval Research Centre of CMFRI)

Occurrence of deep sea shrimp *Plesionika adensameri* from Indian waters

Deep-sea shrimp *Plesionika adensameri* (Balss 1914) was collected from the deep-sea shrimp trawl landings at Tuticorin Fisheries Harbour (Tamilnadu) and Kalamukku fish landing center (Kerala). This is the first record of the species from Indian waters. This species has been previously reported from Gulf of Aden, Maldives, Red Sea. The present record indicates a considerable extension of its distributional range.



First record of goat fish *Parupeneus heptacanthus* at Visakhapatnam Fishing Harbour



Parupeneus heptacanthus Lacepède (1801)

A species of goatfish identified as *Parupeneus heptacanthus* was collected from the trawl catch at Visakhapatnam fishing harbour. *Parupeneus heptacanthus* is distinguished from other species of goatfishes by the presence of a single row of well-spaced stout conical teeth in jaws, no teeth on the roof of the mouth, three vertical rows of scales in the space between the dorsal fins, nine vertical rows of scales along the upper part of caudal peduncle and a pale reddish spot just below seventh and eighth lateral line scales. The fish popularly known as Cinnabar goatfish was a stray specimen landed along with other goat fishes at Visakhapatnam but known to have a wide distribution along both the coasts of India.

Success achieved in large scale production of Green mussel, *Perna viridis* spat in Visakhapatnam hatchery

Over 1.5 lakh mussel spat has been produced in the second cycle of spawning and larval rearing carried out in the marine hatchery of VRC of Visakhapatnam. The size of the spat ranges from 5 to 14.9 mm and are ready to be transferred to the open sea for further culture. This is the first successful attempt in India in producing spat on large scale. The hatchery technology has been successfully upgraded and with a few further trials, the technology will be ready for transfer to the end users. This will help to reduce pressure on the wild stock which is currently being used for mussel farming.



Spat of Green mussel, *Perna viridis*

(Visakhapatnam Research Centre of CMFRI)



Cages in Uppunda estuary under Capture based aquaculture

Popularization of Capture based Aquaculture (CBA) in Uppunda, Byndoor, Karnataka

fishermen. This village has an estuary which is about 3-4 km length with an average depth of 2.5 m. The concept of CBA was introduced in the village by

collection of *Lutjanus argentimaculatus* fingerlings of 80 mm size and stocking in floating cages of 2.5 m x 2.5 m x 2 m made of Netlon mesh of 30 mm and inside lined with nylon net. The fishes were fed with low cost fishes. The growth was monitored regularly. Demonstration of this methodology encouraged the fishermen to install cages

of similar type in the estuary and at present the estuary has five cages stocked with fingerlings of *Lutjanus argentimaculatus*, *Etroplus suratensis* and *Lates calcarifer*. The fishermen observe this as an alternative source of fish resources when adverse climatic conditions prevent them from venturing into the sea. Similar cages are also installed in Kundapura estuary and the small fishes which are otherwise wasted are grown into marketable size in these cages.

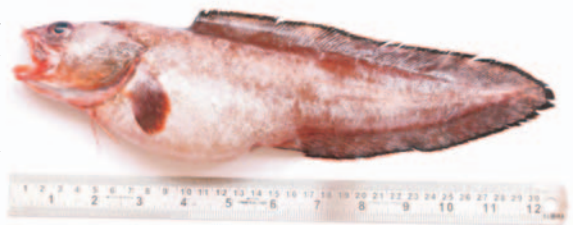
(Manglore Research Centre of CMFRI)

First record of *Brotula multibarbata* from Malabar region

A single specimen of *Brotula multibarbata* (Temminck & Schlegel, 1846), commonly called Goatsbeard brotula belonging to the family Ophidiidae was observed in the trawl landings at Beypore Fisheries Harbour on 2.1.2010. The fish measuring 342 mm in length and weighing 680 g was caught by a trawler operating off Calicut at a depth of 90m. The distinguishing character of this species is that it has a uniform dark brown colour, dorsal fin with white edge and submarginal black band; dorsal, caudal and anal fins without spines, continuous as in an eel; pectoral fins round; ventral fins thread-like; body slimy with small

scales. Large mouth with small teeth, and with 6 upper and 6 lower barbells. This is a family comprising about 209 species of mostly marine fishes with a few representatives living in brackish and fresh

waters. Their distribution includes the Atlantic, Indian, and Pacific Oceans. It is Benthopelagic on shelf and upper slope. It occurs at depths of at least 220 m. Adults (30-90 cm) move to depths of 100-650 m. A nocturnal species, it lives in caves and crevices during the day and



emerges from cover at night to feed on crustaceans, mainly crabs and fishes. It is harmless to humans and is utilised for human consumption.

(P. P. Manojkumar,
Calicut Research Centre of CMFRI)

Common spider conch *Lambis lambis* bred under captivity at TRC of CMFRI, Tuticorin

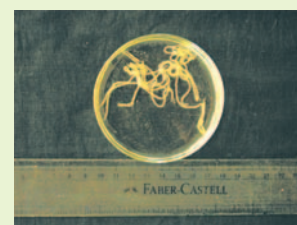
Common spider conch *Lambis lambis* is a commercially important marine gastropod and are listed in the Wildlife Act Schedule, 1972 as vulnerable/ endangered species for protection.

Landing centre discarded live specimens of *Lambis lambis* were collected from Vellapatti and transported to the Shell Fish hatchery of CMFRI, Tuticorin. A set of 5 animals each were maintained for observation on survival, mating and breeding under captivity. Brood stocks were held in one ton FRP tank with airlift recirculation system for filtration and macro algae and the other set in 250 litre FRP tanks provided with macro algae and encrusted algal stone boulders collected from wild. Water

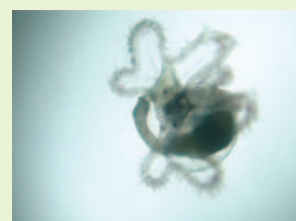
parameters are monitored and water was changed once in a week (100%). Daily observations on the stocked conch shells for their mating behavior were made. After four months of maintenance, the conch shells in both the brood stock holding system mated and commenced spawning once on 09.11.2009. Several masses of egg filaments pale brown in colour were laid in the tank bottom and continued for two days. Hatching of egg mass was done in separate tank and the newly laid egg mass took 5 days for complete hatching. Veligers were free swimming and measured about 680µm. Larvae of conch shell is being reared



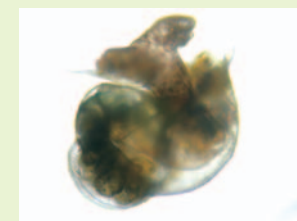
Spawning of Conch shells



A part of the egg filaments



Day 1 veliger



18 day post hatch larvae

successfully till 18 day post hatch (1045µm) as compared to the rearing of veligers of the same species up to 7 days reported elsewhere.



Seen in the Photo Dr. Syda Rao, Director, CMFRI, Mr. V. Vivekanandan, SIFFS, Dr. Boopendranath, CIFT, Dr. E. V. Radhakrishnan and Dr. C. Ramachandran

Workshop on Eco-labelling and Sustainable Fisheries Management: The road ahead for India

The one day multi stakeholder Co-learning workshop on “*Ecolabelling and Sustainable Fisheries Management: The road ahead for India*” held at CMFRI on March 30, 2010 mooted the idea of India taking the initiative for developing an ecolabelling scheme of its own, to equip the marine Indian fishery industry in availing the opportunities being unfolded in the wake of an emerging market for ecolabelled marine products.

Eco-labelling is the granting of product labels (usually applied voluntarily) by a private or public organisation to inform consumers about the environmental impact of a product. The label aims to influence consumers at the point of sale and directs them to purchase products that are determined to have fewer impacts than other functionally and competitively similar products. Eco-labels are derived from certification processes and are a market based approach that attempt to influence consumer behaviour toward fisheries products that are generated through sustainable practices. The major objective of the workshop was to get the different fisheries stakeholders

sensitized about the various issues that unfold in the emerging scenario of Non State Market based fisheries management measures like eco-labeling and deliberate on the path India should undertake to tap the emerging opportunities. The workshop highlighted that certifying sustainability in tropical water scenario, where conventional yardsticks rooted in temperate context sound inadequate, is a challenge in itself. Beyond the trade opportunities, what the logic of ecolabel offers is a unique chance to revisit our efforts in placing a contextualized management paradigm for Indian marine fisheries sector.

It was felt that a self-declaring eco-label by India would provide an opportunity not only to access the market for ecolabelled products but also to reorient the regulatory and fisheries management system in the country to ensure sustainability of the marine resources using the market as a driving force.

The speakers who dealt with the various issues related with ecolabelling included Dr.E.Vivekanandan (CMFRI),

Mr.V. Vivekanandan (SIFFS), Dr M.R. Boopendranath (CIFT), Mr Vinod. M (WWF), Mr Sandu Joseph (SEAI) , Mr. T. N. Venugopal (Interlink foods) and Dr.C Ramachandran (CMFRI). Dr. G. Syda Rao, Director CMFRI gave the introductory remarks. Dr. E. V. Radhakrishnan, Head, CFD welcomed the gathering. Dr. R. Narayanakumar, Senior Scientist proposed vote of thanks. The workshop came out with a framework for progressing further in this line. The initiative taken by CMFRI was appreciated by the participants.

The workshop was attended by Dr K. K. Appukkuttan, Mr Ravindran Nair, Mr Joseph Kalapurakkal, Jossy Palliparambil, Scientists and research scholars from CMFRI, CIFT, FSI and MPEDA, various stakeholders representing fishermen organizations, industry, and exporters.

The workshop was jointly organized by National Agricultural Innovation Project (A value chain on Oceanic Tuna in Lakshadweep Fisheries) ICAR, New Delhi and SEETT Division of CMFRI, Cochin.

CMFRI float in Police Carnival



Float of CMFRI in Police Tourist Carnival, Kochi

SEETT Division of CMFRI organized a 'Float' in the Police Tourist Carnival at Jews Street, Mattancherry on 27th February, 2010. The carnival extended from Kappalandimukku junction to around 1.5km upto Mattancherry Boat Jetty which aims at enhancing the

brotherhood between security forces and general public showcasing the cultural heritage of Kerala. CMFRI presented the float on the theme 'Coastal security is our nutritional security' emphasising on responsible fisheries.

Events

Women Cell Programme

Women Cell, CMFRI, organized a seminar in connection with the observance of the International Centenary Women's Day, on 8th March, 2010 at 1430 hrs in the CMFRI Auditorium. Dr. Sitalakshmi George, a well known personality in child psychiatry (M D Psychiatry and Associate Professor), Malankara Orthodox Syrian Church Medical College, Kolencherry was the Chief Guest and delivered a talk on a subject of topical interest, “**Parenting Skills**” followed by interactive session. Presidential address was given by Dr. Syda Rao, Director, CMFRI.

Stakeholders Meet on Fishing Ban

At Headquarters, Cochin

A 'Monsoon Trawl Ban Meet' of the Stakeholders was organised on 15th February, 2010 at CMFRI Kochi. About 40 fisherfolk leaders from among the various organizations participated in the meet and the opinions were recorded. The meeting was coordinated by Dr. N. G. K. Pillai, Head, PFD; Dr. R. Sathiadhas, Head, SEETTD; Dr. C. Ramachandran and Dr. R. Narayanakumar. The prominent organizations which were represented to the meet were Kerala State Fishing Boat Operators Association, Kerala Swanthanthra Matsya Thozhilali Federation, Kerala Matsya Thozhilali Aikya Vedhi, Chamber of Seafood Industry, Matsya Mazdoor Sabha, Fishing Boat Operators Relief Organisation, Deep Sea Fishing Boat Operator's Association, Fishing Boat Operator's Welfare Association, (Cochin and Munambam) and Kollam Jilla Boat Operator's Association.



Monsoon Trawl Ban Meet of Stakeholders at CMFRI, Kochi

At Mandapam

The stakeholders meet was held on 10-12-2009 at Mandapam Regional Centre of CMFRI. The meeting was attended by the representatives of various Fishermen Associations, Assistant Directors of Tamilnadu State Fisheries Department from Mandapam, Rameswaram and Ramanathapuram.

At Veraval

The stakeholders meet was conducted on 17-12-2009 at Veraval Regional Centre of CMFRI. 32 persons from different organizations, Industrialists, State and Central Government officials and the representatives of Fishermen Associations participated and exchanged their views.

At Visakhapatnam

A group discussion by stakeholders involved with fishing activities on "Fishing ban and its effect on fishery along the Andhra Coast" was conducted on 21.12.2009. About 40 participants from traditional, motorized and mechanized sectors attended the discussion and expressed their views on the subject.



A group discussion by stakeholders at Visakhapatnam

At Calicut

The stakeholders meet of this region was conducted on 30-12-2009 at Calicut Research Centre of CMFRI. The Joint Director of Fisheries, Kozhikode; Deputy Director of Fisheries, Kozhikode; Manager, Matsyafed, Kozhikode; representatives from various Fisheries Associations and Scientists of the Centre attended the meeting.

At Chennai

The Stakeholders meeting was held at Madras Research Centre of CMFRI on 12th January 2010 at 14.30 hrs. to get the stakeholder's views on the fishing ban, its duration and its impact that had been experienced since the inception of the ban in Tamil Nadu.

At Karwar

The stakeholders meet was conducted on 21-12-2009 under the chairmanship of Dr. K. Vijayakumaran, Director General, Fishery Survey of India at Karwar Research Centre of CMFRI. Representatives from Traditional Fishermen Union, Country Boat Owners Union, Gillnet Owners Union, Trawl and Purse seine Boat owners Union, Chairman, Karwar Municipality, Deputy Director of Fisheries, Assistant Director of Fisheries and CEO, BEFFDA participated.

At Mangalore

Dr. P. S. Swathilekshmi, Scientist (Sr. Scale), SEETTD attended the Fishermen stakeholder meeting to study the "Impact of Fishing ban on Fishermen in Karnataka" organized by the State Fisheries Department, Government of Karnataka and the Director General, Fishery Survey of India on 24-12-2009 at Mangalore Fisheries harbour, Mangalore.

At Mumbai

The stakeholders meeting was organized in connection with monsoon fishing ban for regulation and management of marine fisheries in Maharashtra at C.I.F.E. Auditorium by Mumbai Research Centre on 23.12.2009. A total of 175 members mostly from fishermen community, exporters, office bearers of fishermen co-op. Soc. & Fish merchants attended the programme. Chief guest Dr. V. S. Somavanshi, Former Director General, Fishery Survey of India, Mumbai formally inaugurated the programme by lighting traditional lamp and presided over the function. Dr. Shekhar Kohale, Dean, Fisheries College, Ratnagiri, Shri Rambhau Patil, Shri Dilip Pagdhare and Shri Damodhar Tandel (Fishermen leaders), Dr.(Mrs) Nandini V. Deshmukh, Senior Professor and Head of Zoology, Kirti College, Mumbai, Officers of FSI and State Fisheries Department were present at the meeting.



Fishermen Meet organized by the Mumbai R C

At Tuticorin

The stakeholders meeting to assess the impact of trawl ban was held on 30-12-2009 at Tuticorin Research Centre of CMFRI. Officials from Tamilnadu State Fisheries Department, representatives from Tuticorin District Mechanised Trawl Boat Owners Association, representatives from Trawl Boat Workers Union and Scientists of the Centre participated.

CMFRI participated in the following exhibitions

- Exhibition in connection with the National Seminar on Conservation and Sustainability of Coastal Living Resources of India from 1st to 3rd December 2009.
- 'Polima' organized at Fisheries High School, S.N.Puram, Thrissur from 20th to 23rd December 2009.
- 'Brinjal Fest 2009' at Mararikulam, Kanichukulangara from 27th December to 3rd January 2010.
- Exposition of National Seminar on Integrated Management of Water



Dr. T.M. Thomas Isac, Finance Minister for Kerala State along with Dr. G.Syda Rao, Director, CMFRI on the occasion of Brinjal Fest

resources with reference to Biodiversity and Livelihood at R.M.N.H, Bhopal, from 16th to 17th January 2010.

- Karshikamela at Thodupuzha, from 18th to 26th January 2010.
- Agricultural Technology Exhibition and Kisan Mela at Peruvannamuzhy, Calicut from 8th to 12th February 2010.
- "ANNAM National Food and Agro Bio-diversity Festival" at Calicut from 11th to 15th February 2010.
- International Aqua show at Kaloor, Cochin from 11th to 16th February 2010.
- Exposition of CIFT National Seminar on Remote sensing and Fisheries at Abad Plaza, Kochi from 15th to 17th February 2010.



Dr. Ramkrishna Kusmariya, Minister for Farmer welfare & Agriculture Development, Govt. of Madhyapradesh visits CMFRI stall in Bhopal

Participation in Aquashow held at Thiruvananthapuram

Vizhinjam Research Centre of CMFRI has participated in the Aquashow held at Thiruvananthapuram from 18th to 28th December 2009 and bagged first prize for the best stall.



Dr. M.K Anil receiving the trophy for best institutional stall in Aquashow 2009 Thiruvananthapuram

Participation in Ind Aquaria 2010 at Chennai

Participated in Ind Aquaria 2010 exhibition organised by the Marine Products Export Development Authority at YMCA, Vepery, Chennai on 8th January 2010. The Madras Research Centre of CMFRI received awards and has won II prize for Best fish and III prize for best stall.



Dr. G. Mohanraj, Principal Scientist receiving the award from Prof. K.V. Thomas, Hon'ble Minister of State for Agriculture, Consumer Affairs, Food & Public Distribution, Govt. of India.

Minister Visits Vizhinjam Research Centre of CMFRI

Dr. Shashi Tharoor, Hon' Minister of State for External affairs and the Member of Parliament (Thiruvananthapuram) and Shri. George Mercier, MLA, visited Vizhinjam RC of CMFRI on 10th February 2010.



The Hon' Minister Dr. Shashi Tharoor and Shri. George Mercier MLA with the Scientists



Dr. P.L. Gautam at CMFRI Museum

Dr. Usha Goswami, Director, Marine Bioresource Centre, Jamnagar, visited Veraval Research Centre of CMFRI on 23.01.2010.

Dr. N.K. Tyagi, Member, ASRB visited Veraval Research Centre of CMFRI on 02.02.2010.

Dr. P.L. Gautam, Chairman, National Biodiversity Authority, Chennai visited the National Repository Museum at Head quarters.

Official Language Implementation

Parliamentary Committee inspection

The Second sub committee of Parliamentary Committee on Official Language inspected the Official Language Implementation activities of Veraval Regional Centre of CMFRI on 18th January, 2010. The inspection meeting was chaired by Dr. Prasanna Kumar Patsani M P (Lok Sabha). Shri Kishanbhai V. Patel, Member of the Committee and M P (Lok Sabha); Dr. Ramesh Chandra Sharma, Under Secretary, Committee Secretariate were present. From the office side Dr. Madan Mohan, Assistant Director General (Fy.), ICAR, Shri Harish Chandra Joshi, Director (OL) ICAR; Dr. G. Syda Rao, Director, CMFRI, Smt. Roja Sethumadhavan, Sr. Administrative Officer, CMFRI, Smt. Sheela PJ, Assistant Director (OL), CMFRI, Cochin, Smt. E.K. Uma, Technical Officer (Hindi), CMFRI, Cochin, Dr. Gulshad Mohammed, Scientist in Charge, Veraval Regional Centre of CMFRI, Veraval and Shri M.M. Vanvi, U.D. Clerk, Veraval Regional Centre of CMFRI, Veraval attended the meeting.

The progress made in the implementation of Official Language policy based on the questionnaire



Parliamentary Committee inspection on Official Language on 18.01.2010 for Veraval Regional Centre of CMFRI in progress

submitted was discussed in the inspection meeting and suggestions were also given for further improvement.

Workshop on Noting and Drafting in Hindi

One day workshop on "Noting and drafting" was conducted at Calicut Research Centre of CMFRI. All the staff members of this centre participated in the Hindi workshop. Shri. Ramachandran, Hindi Officer, Income Tax Office, Cochin took class for the participants.

Hindi Workshop

In order to encourage staff to do work in Hindi without hesitation a one day

Hindi workshop was organized at Veraval Regional Centre of CMFRI, Veraval on 16-12-2009.

Valedictory function of Hindi Week

Valedictory function of Hindi Week was held at Madras Research Centre on 23rd November 2009. Smt. Sarwar Chida, Assistant Director, Hindi Official Language, BSNL, Chennai was the Chief Guest of the Valedictory function and distributed the prizes to the winners who participated in the various Hindi Competitions conducted during the Hindi Week celebration from 25th to 30th September 2009.



Deputation to Brazil

Team of global sciaenidae experts at the Workshop at Manaus, Brazil during 9th-14th Nov, 2009

Dr. G. Mohanraj, Principal Scientist, Madras Research Centre of Central Marine Fisheries Research Institute, went on deputation to attend the "IUCN Global and Regional Sciaenidae Red List Workshop" held at Hotel Tropical, Manaus, Brazil during 9th -14th November, 2009. The workshop was organised jointly by the agencies International Union for Conservation of Nature (IUCN), Species Survival Commission (SSC), Taiwan Forest

Bureau, Instituto Chico Mendes de Conservacao da Biodiversidade (ICMbio- MMA), IUCN Red List & Bio Amazonia Conservation International. Sciaenid experts from India, China, Taiwan, Vietnam, Thailand, Hong Kong, Abu Dhabi, Venezuela, South Africa, Australia, England, Mexico, U.S.A and Brazil along with the programme officers of IUCN, Red List Authority participated in the workshop. Prof (Dr). Ning Labbish Chao, the key person who conceived

the concept of the workshop enabled the participants, totaling forty eight in their venture to come out with fruitful discussion in deciding about the status of different species of sciaenids.



Dr. G. Mohanraj addressing the sciaenid experts

Workshop on "Marine Fisheries Census-2010" conducted at Madras RC

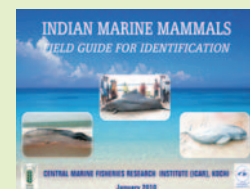
First workshop on 'Marine Fisheries Census – 2010' was held from 3rd to 5th December, 2009 at MRC of CMFRI, Chennai. Technical and scientific personnel who have been identified either as field or district level supervisor for carrying out the Census Work in Tamil Nadu and south Andhra Pradesh attended the workshop. Dr. E. Vivekandan, P.S & Head, FRAD informed that the proposed census work has been scheduled to be conducted during April-May, 2010 and

highlighted the importance of the census programme. He stressed the need for the effective co-ordination and co-operation among the various agencies for the successful implementation of the work as per schedule. Dr. H.M.Kasim, P.S & S.I.C, MRC of CMFRI, Chennai, Dr. Gopakumar, P.S & S.I.C, MRC of CMFRI, Mandapam Camp, Dr.(Mrs) V. Kripa, P.S & S.I.C, TRC of CMFRI & Dr. G. Mohanraj, P.S addressed the participants.

Publications

Tamil pamphlet on Cage culture

(Kadalil mithavai koondugalil meen valarpu): CMFRI Pamphlet No.11 / 2010



Indian marine mammals

Field guide for identification : (E. Vivekanandan, et al.) CMFRI Pamphlet No. 12/ 2010 : 30 pp.

Marine Mammal Research and conservation in India (E. Vivekanandan, et al.) CMFRI Pamphlet No. 13/2010 : 20 pp.



Poster on Marine Mammals of the Indian EEZ



Dr. G. Syda Rao, Director

Chennai Research Centre for review of research and NIOT Lobster Conference function and submission of QRT report at New Delhi on 4th and 5th January 2010.

Mumbai Research Centre and Veraval Regional Centre in connection with visit of Parliamentary Committee from 15th to 20th January 2010.

Selection Committee Meeting at New Delhi on 21st & 22nd January 2010.

- Cage Culture Review Meeting of DAHD&F- CMFRI at CMFRI, Cochin on 28th January 2010.
- DG's Meeting at New Delhi on 29th & 30th January 2010.
- Vizhinjam Research Centre to conduct research review meeting with Scientists and witnessed the harvest of 1st batch of lobsters from the cage at Kanyakumari on 6th and 7th February 2010.
- Director's Meeting at New Delhi from 11th to 17th February 2010.
- State Level Committee & Quality Control Committee for the operation of the project 'Seed production in agricultural crops and fisheries' at CMFRI, Kochi on 20th February 2010.
- Second Meeting of the Technical Committee to assess the Impact of Fishing Ban at CMFRI, Kochi on 20th February.
- Second Meeting of the Expert Committee for revalidation of potential Fishery resources in the Indian EEZ at CMFRI, Cochin on 9th March 2010.
- Inaugural ceremony of ICAR - Zonal Technology Management Centre & Business Planning and Development University at CIFT, Cochin on 12th March 2010
- Madras Research Centre of CMFRI for inspection and review of research on 16th & 17th March 2010.
- NFDB presentation 23-25, March 2010.

Dr. E. Vivekanandan, Principal Scientist & Head, Demersal Fisheries Division Participated in the consultation on Draft Marine Fisheries (Regulation and Management) Act organized by DAHD

&F, Ministry of Agriculture at Delhi on 12th February 2010.

Participated in International Symposium "Remote Sensing and Marine Fisheries" organised by SAFARI and CIFT at Kochi during 15-17 February 2010.

Delivered a talk "Adaptation options on marine fisheries" in the Seminar 'Climate Change and Aquatic Systems' organised by CUSAT, Kochi on 18th February 2010.

Delivered a talk on "*Impact of climate change on marine fisheries*" in the Seminar "Climate Change and marine biodiversity" organized at CAS in Marine Biology, Parangipettai on 26th February 2010.

Dr.E.V.Radhakrishnan, Head, CFD attended the RALBAM 2010 at Chennai from 5-8 January 2010 and presented the paper.

Dr.R. Sathiadhas, Head, SEETTD attended the IMPCC meeting on 24th February, 2010 at Dooradhasan Kendra Trivandrum.

Dr. (Mrs.) Mary K. Manisseri, Head, MBD attended a meeting of the 'Consultative Committee on wildlife matter' convened by the Ministry of Environment & Forests, at Paryavaran Building, CGO Complex, New Delhi, on 2.2.2010.

Dr. Gulshad Mohammed, SIC, Veraval RC, presented a paper at Seminar "International Conference on Recent Advances in Lobster biology, aquaculture and management (RALBAM 2010)" held at NIOT, Chennai from 05.01.2010 and 08.01.2010.

Attended the 2nd Scientific Advisory Council Meeting at KVK, Ambuja Cement Foundation, Kodinar on 05.03.2010.

Dr.V.D.Deshmukh, Principal Scientist and S.I.C, Mumbai Research Centre attended 20th Indian Zoological Congress (29.12.2009 to 31.12.2009) and co-chaired session on "Freshwater and Marine Biology" on 29.12.2009 and presented a paper on Polynemids.

Attended and delivered a speech on importance of fisheries "Management and Regulation" in view of MF(R&M) ACT 2009 to stakeholders and officials from other organizations including fisheries minister, Maharashtra Government.

G. Maheswarudu, Principal Scientist, as an expert in Marine Fisheries, attended the meetings on 07-01-2010 and 08-01-2010, called by the District collector, Srikakulam, in connection with the discussion on issues raised by the Fishermen of about 12 fishing villages against the construction of 2640 MW Thermal Power Plant by NCC Ltd., Hyderabad in the Srikakulam District.

Dr. A.P.Dineshbabu, Scientist-in-Charge, Mangalore Research Centre, Dr. Sujitha Thomas, Senior Scientist, Dr. Geetha Sasikumar, MFD attended the meeting on Cage Culture of Sea Bass-second level discussion, organised by the District Office, Matsyafed, Kasaragod, Kerala on 01-12-2009.

Attended the meeting on Mangrove conservation (Green belt) in Karnataka organized by the Chairman, Western Ghats Task Force, Government of Karnataka on 9-2-2010 at Kundapur, Udupi district.

Dr. P.S.Swathilekshmi, Scientist, Sr.Scale, SEETTD, attended the Work Shop on ITK in Fisheries Sector-West Coast conducted by the CIFE, Mumbai from 8-13 February, 2010 and presented a paper on the "Indigenous Technical Knowledge pertaining to Marine Fisheries of Karnataka."

Smt. Ganga.U, Scientist (SG) attended the SAFARI (Societal Applications in Fisheries and Aquaculture using Remotely sensed Imagery) training programme on *Remote Sensing and Ecosystem based Fisheries Management* held at the National Institute of Oceanography (NIO) during 11-13th February, 2010.

Dr. Satyanarayan Sethi, Scientist attended the Winter School Programme on "Application of Molecular and serological Tools in Fish Disease Diagnosis from 9.11.09 to 29.11.09 at CIFA, Bhubaneswar.

Mr. Hashim Manjebraayakath, JRF, Pelagic Fisheries Division participating in the 3 months long IV Southern Ocean Expedition commenced on 12th January, 2010 conducted by National Centre for Antarctic and Ocean Research, Ministry of Earth Sciences, Govt. of India, Goa.

Mr. Bineesh. K. K Research scholar of the PF Division participated in deep-sea trawl survey off Kerala coast onboard *Matsyavarshini* of Fishery Survey of India during February, 2010.

Dr. N.G.K. Pillai retires



Dr. N. G. K. Pillai, Principal Scientist and Head, Pelagic Fisheries Division retired from ICAR service upon superannuation on 31.03.2010. He served in the Council for a long period of 31 years and 7 months from 09.08.1978. At the time of his selection to ICAR, he was serving in IFP as Scientific Assistant. He served initially during 1978-1984 at Mandapam as

Scientist S1. He was posted to Vizhinjam in 1984 as Scientist S2. In January 1986, he was posted at CMFRI Headquarters, Cochin as Senior Scientist. He assumed the charge of Head, Pelagic Fisheries Division in November 1996 and was continuing till date. For a short brief from December 2007 to July 2008, he was officiating as Director-In-Charge of the Institute.

During his service period he served in various capacities in expert committees, boards, task forces and related bodies constituted by SAUs, Central Institutes, Fisheries Department, Govt. of Kerala, Govt. of Goa etc. Prominent among them are: Member, Senate, Academic Council and Board of Studies, CUSAT and Institute Management Committee, CMFRI & CIFT, Kochi; recognized examiner and guide for B.F.Sc./M.Sc./M.F.Sc./Ph.D. courses in various SAUs and other Universities in the country; serving as Associate Editor (India), Egyptian Journal of Aquatic Research.

Dr. H. M. Kasim retires



Dr. H. Mohamad Kasim, Principal Scientist & Scientist-in-charge, Madras Research Centre of CMFRI, Chennai retired from service on 28th February 2010 after putting a glorious service of thirtythree years in Central Marine Fisheries Research Institute at various places. He is born on 7th February 1948 in the southern part of Tamil Nadu in a simple and humble family. He had his early education at Madurai and later on

he had his post graduation in Annamalai University and obtained Doctorate degree from Madurai University. He is an authority on Fish Stock Assessment and he is very widely cited by many workers throughout the world. He has contributed more than 100 research papers in the reputed scientific journals both at national and international levels. Before his retirement he has submitted a thesis for the award of D.Sc. degree to the Madras University. Under his eminent leadership, many consultancy programmes on Artificial Fish Habitats have been successfully executed by the Institute.

He contributed considerably to the science by way of various publications and reports. He has published more than 174 research papers in reputed scientific journals/books.

APPOINTMENTS

Name	Designation	Center	w.e.f
Shri Shoji Joy Edison	SMS (T-6) (Horticulture)	KVK, Narakkal	21.01.2010
Shri F. Pushparaj Angelo	SMS (T-6) Agriculture Extension	KVK, Narakkal	21.01.2010
Dr. S. Shanas	SMS (T-6)(Plant Protection)	KVK, Narakkal	29.01.2010
Shri Vijendra Kumar Meena	SMS (T-6) (Agronomy/Soil Science)	KVK, Narakkal	01.02.2010
Shri V.K. Manu	T-4 Programme Assistant (Computer)	KVK, Narakkal	28.01.2010
Ms. Dipti N.V.	T-4 Programme Assistant (Laboratory Technician)	KVK, Narakkal	01.02.2010

PROMOTIONS

Names	From	Promoted To	Center	w.e.f
Shri C.N. Chandrasekharan	Personal Assistant	Private Secretary	Kochi	19.01.2010
Smt. Bindu Sanjeev	Steno. Gr.III	Personal Assistant	Kochi	22.01.2010
Shri S. Balasubramaniam	Assistant	AAO	Mandapam	03.02.2010
Shri Sumesh T.K.	LDC	UDC	Kochi	29.10.2009
Shri Sunil Raj K.S.	LDC	UDC	Kochi	03.11.2009
Shri T.V. Shaji	SSS	LDC	Vizhinjam	05.01.2010
Shri R. Balakrishnan	SSS	LDC	Kochi	08.02.2010

ASSUMPTION OF CHARGE

Dr. V. Kripa, PS assumed the charges of Head, FEMD w.e.f. 01.03.2010 at Hqrs. Kochi.

Dr. M. S. Madan, Principal Scientist assumed the charge of Scientist-in-Charge, Tuticorin RC on 10-3-2010.

Dr. G. Mohanraj, Principal Scientist assumed the charge of Scientist-in-Charge, Madras RC on 26-3-2010.

TRANSFERS

Name	Designation	From	To
Shri K. Diwakar	T-6 (TO)	Mandapam RC	Tuticorin RC
Shri U. Jeyaram	T-3 (TA)	Mandapam RC	Tuticorin RC
Shri S.M. Sathakkathulla	T-3 (TA)	Mandapam RC	Tuticorin RC
Shri M.P. Sivadasan	T-4 (STA)	KVK, Narakkal	Calicut RC
Shri M.M. Bhaskaran	T-3 (TA)	KVK, Narakkal	Calicut RC

RETIREMENTS

Name	Designation	Center	w.e.f
Retirement on Superannuation			
Shri L. Jayasankaran	T-5 (TO)	Madras RC	31.12.2009
Smt. S. Seethalakshmi	SSS	Kochi	31.12.2009
Shri S.G. Raje	Scientist (SG)	Mumbai RC	31.01.2010
Shri C.K. Krishnan	T-6 (TO)	Calicut RC	31.01.2010
Shri M.K. Abdulla	AAO	Mandapam RC	31.01.2010
Shri K. Shanmugasundaram	T-3 (TA)	Tuticorin RC	31.01.2010
Dr. H. Mohammed Kasim	Principal Scientist & SIC Madras RC	Madras RC	28.02.2010
Shri M. Manickaraja	T-5 (TO)	Tuticorin RC	28.02.2010
Shri A.K. Velayudhan	T-4 (STA)	Vizhinjam RC	28.02.2010
Shri P. Palani	T-4 (STA)	Mandapam RC	28.02.2010
Shri H.S. Mahadevaswamy	T-3 (TA)	Mangalore RC	28.02.2010
Shri Haridasan Thannimukoth	SSS	Calicut RC	28.02.2010
Shri M. Seeni	SSS	Mandapam RC	28.02.2010
Dr. N.G.K. Pillai	Principal Scientist & Head PFD	Kochi	31.03.2010
Shri. K. J. Mathew	T-5 (TO-Motor Driver)	Kochi	31.03.2010
Shri. D. Nagaraja	T-5 (TO)	Mangalore RC	31.03.2010

Voluntary retirement

Shri C.D. Davis	T-5 (TO-Motor Driver)	Kochi	01.02.2010 FN
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**WINNERS FOR THE ICAR SPORTS MEET HELD DURING
23-27 FEBRUARY AT COCHIN**
Athletics

S.No:	Participant	Event	Position
1.	Mr. A.K. Shaji	Athletics	Best Athlete
2.	Mr. A.K. Shaji	Javelin Throw (M)	First Place
3.	Mr. A.K. Shaji	Discus Throw (M)	First Place
4.	Mr. A.K. Shaji	High Jump (M)	First Place
5.	Mr. A.K. Shaji	Shotput (M)	Second place
6.	Ms. K. Smitha	High Jump (W)	Second Place
7.	Mr. Mendon Xavier	High Jump (M)	Second Place
8.	Mr. P. U. Shetty	Shotput (M)	Third Place

Games
Basket Ball(M)- Runners Up

Sl.No:	Player
1.	Dr. Shyam.S. Salim (Captain)
2.	Mr. Sunil A.T
3.	Mr. Jerald Raja
4.	Mr. Joseph Mathew
5.	Mr. A.K. Shaji
6.	Mr. Rishikesh Aandi
7.	Mr. Mendonza Xavier

Shuttle Badminton-Runners Up

Sl.No:	Player
1.	Mr. Joseph Mathew (Captain)
2.	Dr. Shyam. S. Salim
3.	Mr. A.K. Shaji
4.	Mr. C. Jayakanthan
5.	Mr. P.V. Sunil

Table Tennis (W) Runners Up

Sl.No:	Player
1.	Ms. Bindu Sanjeev (Captain)
2.	Ms. Smitha.K



Best Athlete Mr. A.K. Shaji
receiving the trophy

Academic News

Smt. Bindu Sulochanan, Scientist was awarded Ph.D (Environmental Sciences) degree on the topic 'Sediment dynamics of seagrass beds off Mandapam and its influence on coastal erosion by Madurai Kamaraj University

Shri.C.D.Manoharan, PA of SEETT Division acquired an additional qualification of Master of Arts in Rural Development (MA) from Indira Gandhi National Open University.

**Indian Journal of
Fisheries**


After its 56th year of publication, Indian Journal of Fisheries is now indexed in *Science Citation Index Expanded* SCI determines the impact factor of a scientific journal.

CMFRI launches two new products



Release of Cadalmin Green Mussel Extract (GMe)

Dr. Krishnaiah, IAS, Chief Executive, National Fisheries Development Board, Hyderabad released the two new products : *Cadalmin Green Mussel Extract (GMe)* and *Cadalmin Varna Marine ornamental Fish Feed*, at a function held at CMFRI on 19-3-2010. Dr. G. Syda Rao, Director, CMFRI; presided over the function. Dr. B. Meenakumari,

Cadalmin™ Green Mussel Extract (GMe)

A holistic health solution from nature



GMe contains 100% natural, marine, bioactive anti-inflammatory principles extracted from the green mussel. Effective for Chronic joint pain & Arthritis and improves Cardiovascular functioning and is a complete nutritional supplement.

GMe is a blend of nutraceuticals and nutritional elements including ω -3 fatty acids, glycogen complex, phospholipids, essential amino acids, vitamins, naturally chelated minerals, antioxidants, carotenoids and enriched polysaccharides. Free from deleterious trans-fatty acids, free radical adducts and low molecular weight carbonyl compounds.



Release of Cadalmin Varna Ornamental Fish Feed

Director, Central Institute of Fisheries Technology and Shri. A. J. Tharakan, Chairman and Managing Director of Amalgam Foods, Kochi, offered felicitations. Dr. K. K. Vijayan, Head, MBT Division, CMFRI, welcomed the gathering and Dr. N. G. K. Pillai, Head, PF Division, CMFRI, proposed vote of thanks.

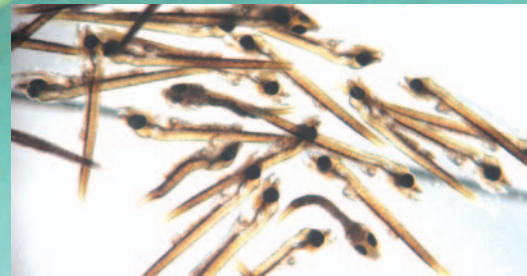
Cadalmin™ Varna Marine Ornamental Fish Feed



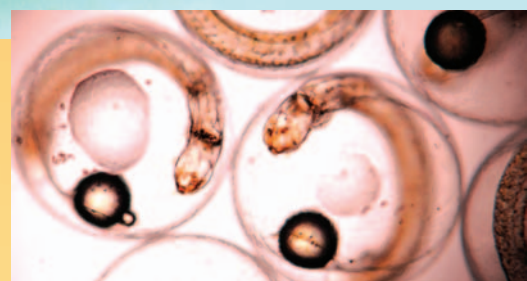
CMFRI has developed and launched dry formulated feed named Cadalmin Varna Marine Ornamental Fish Feed. These feeds contain 40% protein, 9% fat, 39% carbohydrates, 7% ash and less than 2% fiber and colour imparting nutrients like carotenoids from natural sources. They are slow sinking crumbles available in three particle sizes, 0.25mm, 0.75mm and 1 mm. produced through twinscrew extrusion technology which is the state of the art in aquatic feed production. This feed is used for feeding freshwater ornamental fish also in the farms of Kerala Aqua Ventures International (KAVIL). Ornamental Fish Farmers Association of Kerala has also accepted this feed as a nutritionally complete feed in their homesteads. The quality and quantity of the imported ornamental fish feeds are questionable. It is in this scenario, import substitutes developed through indigenous research made an impact. Presently these feeds are available through the Agriculture Technology Information Centre (ATIC) of CMFRI. These feeds are sold in 50g pouches and containers costing Rs.20. CMFRI is on the lookout for a commercial partner for up scaling the product and making it available in the open market.



Brooders of Cobia in the spawning tank



Cobia larvae on 4th day of post hatch



Developing embryo of Cobia



Fertilized eggs collected from spawning tank

Broodstock development, induced breeding and larval production of Cobia Achieved for the first time in India: A breakthrough

At Mandapam Regional Centre of CMFRI, broodstock development of Cobia, *Rachycentron canadum* in sea cages was achieved by feeding with broodstock diets. The sexes were determined by cannulation and males and females were segregated and stocked in separate cages. The cannulations of the females were done at regular intervals to assess the size of the intra-ovarian eggs. On 11.03.2010, one of the female with intra-ovarian eggs around 700 μ was selected for induced breeding. The size of the female was 120 cm in total length and 23 kg in weight. Two males were also selected from the male cage. The sizes of the males were 100 cm and 103 cm in total length and weighed 11 kg and 13.5 kg, respectively. The selected brooders were introduced in a 100 ton roofed cement tank with about 60 ton of sea water on the same day. At around 1300 hours, the brooders were induced for spawning with HCG at doses of 500 IU per kg body weight for female and

250 IU per kg body weight for males. Spawning was noted at 0430 hours on 13.03.2010. The total eggs spawned were estimated as 2.1 million. About 90% fertilization was recorded (fertilized eggs amounted to 1.9 million). The eggs were collected by a 500 μ mesh and stocked in incubation tanks with varying densities. The eggs were hatched after 22 hours of incubation at a temperature range of 28-30° C. The percentage of hatching was 80 % and the total number of newly hatched larvae was estimated as 1.5 million. The newly hatched larvae measured in total length from 2.2-2.7 mm. The mouth opening was formed on 16.03.2010 (on 3rd day post hatch). The mouth opening of the newly hatched larvae measured around 200 μ . The larvae were stocked in 15 FRP tanks of 5 ton capacity each at an average density of 50,000 larvae per tank for intensive larviculture. The remaining larvae were stocked in three 100 ton cement tanks for extensive larviculture trials. The

intensive larviculture tanks were provided with green water at a density of about 1×10^5 cells per ml and rotifers enriched with DHA SELCO at a density of 6-8 nos. per ml. In the extensive larviculture tanks, green water along with rotifers are maintained. Good survival of larvae is being observed and the larviculture is progressing well.

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CMFRI Newsletter

Cadalmin, the CMFRI Newsletter is a quarterly publication of the Central Marine Fisheries Research Institute, Cochin. The publication gives an insight into the major events of the quarter, besides highlighting the salient findings in the research front and dissemination of technological know-how to the farming community.



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